

Registered Testing Authority - CSIRO

22 June 2009

Our Ref. ES13 / 734 03/0212

TEST REPORT No. SY4937-1

Requested by: Forbo Floorcoverings P/L
on (date): 18 June 2009
Manufacturer:
Product Desc.: Eternal Stone PUR Pearl, Code: 12012

Sampling details:
Where: Delivered
Date: 22 June 2009
By whom: Courier
How (methods): N/A

The results reported relate only to the sample(s) tested and the information received. No responsibility is taken for the accuracy of the sampling unless it is done under our own supervision. CSIRO cannot accept responsibility for deviations in the manufactured quality and performance of the product. While CSIRO takes care in preparing the reports it provides to clients, it does not warrant that the information in this particular report will be free of errors or omissions or that it will be suitable for the client's purposes. CSIRO will not be responsible for the results of any actions taken by the client or any other person on the basis of the information contained in the report or any opinions expressed in it. The reproduction of this test report is only authorised in the form of a complete photographic facsimile. Our written approval is necessary for any partial reproduction.

This test report consists of 6 pages

SUMMARY OF SLIP RESISTANCE TESTS PERFORMED:

		Result	Class
AS/NZS 4586:2004	Slip resistance classification of new pedestrian surface materials		
	Appendix A: WET Pendulum (Four S). Mean BPN:	38	X [LOW*]
	Appendix B: DRY (FFT). Mean COF:	0.55	F
AS/NZS 4586:2004	Appendix A,B: Dual classification:		X [LOW*]F
	Slip resistance classification of new pedestrian surface materials		
	Appendix C: WET/BAREFOOT Ramp		
AS/NZS 4586:2004	Mean angle of inclination:	15°	A
	Slip resistance classification of new pedestrian surface materials,		
	Appendix D: OIL-WET Ramp		
	Mean overall acceptance angle:	13.8°	R 10 [MEDIUM*]

* = CSIRO classification

In order to interpret the classifications, please refer to Standards Australia Handbook 197, An Introductory Guide to the Slip Resistance of Pedestrian Surface Materials, which recommends minimum classifications for a wide variety of locations.

It is important to realise that test results obtained on unused factory-fresh samples may not be directly applicable in service, where proprietary surface coatings, contamination, wear and subsequent cleaning all influence the behaviour of the pedestrian surface.

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SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIALS

WET PENDULUM TEST METHOD

TEST CARRIED OUT IN ACCORDANCE WITH
AS/NZS 4586:2004 (Appendix A)

Test Date: 22 June 2009

RESULTS:	Location:	Highett Slip Resistance Laboratory	Rubber slider used: Four S
	Sample:	Unfixed	Conditioned with grade P400 paper, dry
	Cleaning:	Distilled water	
	Temperature:	23°C	

Pendulum Friction Tester: Stanley (S/N: 7829, calibrated 17/11/08)
Test conducted by: David Weeks

	Specimen 1	2	3	4	5
Last 3 swings	39	38	36	38	38
	39	38	36	38	38
	38	38	36	38	38
Averages	39	38	36	38	38

Mean BPN : 38

CLASS :

X [LOW*]

* = CSIRO classification

Where products are to be used in wet barefoot areas, it is more appropriate to test to Appendix C of AS/NZS 4586 (which is technically equivalent to DIN 51097).

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SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIALS

DRY FLOOR FRICTION TEST METHOD

TEST CARRIED OUT IN ACCORDANCE WITH
AS/NZS 4586:2004 (Appendix B)

Test Date: 22 June 2009

RESULTS	Location: Highett Slip Resistance Laboratory	Rubber Type: Four S
	Sample Sample Unfixed	Conditioned with grade P400 paper, dry
	Cleaning: Distilled water	
	Temperature: 23°C	
	FFT measurements taken over 2 passes of 800mm each	

Floor Friction Tester: Tortus Mk II (S/N: 244)
Test conducted by: David Weeks

Run 1: Average COF: 0.52

Run 2: Average COF: 0.56

Mean COF: 0.54

According to AS/NZS 4586 the Dry Coefficient of Friction shall be reported as :
(mean rounded to the nearest 0.05)

0.55

CLASS :

F

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SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIALS

WET/BAREFOOT RAMP TEST METHOD

TEST CARRIED OUT IN ACCORDANCE WITH
AS/NZS 4586:2004 (Appendix C)

Test Date: 22 June 2009

Location: Slip Resistance Laboratory

Sample Unfixed

Joint width: 0 mm

Surface structure:

<input checked="" type="checkbox"/>	Smooth
<input type="checkbox"/>	Profiled
<input type="checkbox"/>	Structured

RESULTS

		Actual mean	Reported mean
Mean angle of inclination:	Calibration Board A:	12.53 °	13 °
	Calibration Board B:	17.90 °	18 °
	Calibration Board C:	24.78 °	25 °
Mean angle of inclination of Test Board:		14.69 °	15 °

CLASSIFICATION:

Quality Group:

A

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SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIALS

OIL-WET RAMP TEST METHOD

TEST CARRIED OUT IN ACCORDANCE WITH
AS/NZS 4586:2004 (Appendix D)

Test Date: 22 June 2009

Location: Slip Resistance Laboratory

Sample Unfixed

Joint width: 0 mm

Surface structure:

<input checked="" type="checkbox"/>	Smooth
<input type="checkbox"/>	Profiled
<input type="checkbox"/>	Structured

RESULTS

Mean overall acceptance angle: 13.8 °

Displacement space: not tested

CLASSIFICATION:

Slip Resistance Assessment Group:

R 10 [MEDIUM*]

Displacement Space Assessment Group:

-

* = CSIRO classification

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Date and Place 22 June 2009, North Ryde, NSW

Name, Title and Digital Signature:



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***CSIRO recommended classification of Slip Resistance as determined from:
 AS/NZS 4586: 2004 Slip Resistance Classification of New Pedestrian Surface Materials (Appendices A & D).**

Wet Pendulum Class	BPN 4S Rubber	CSIRO Class LOW	CSIRO Class MEDIUM	CSIRO Class HIGH
V	>54	54-57	58-61	>61
W	45-54	45-48	49-51	52-54
X	35-44	35-38	39-41	42-44
Y	25-34	25-28	29-31	32-34
Z	<25	<18	18-21	22-25
Oil Wet Ramp Class	Angle (degrees)	CSIRO Class LOW	CSIRO Class MEDIUM	CSIRO Class HIGH
R9	≥6 to <10	≥6 to 7.5	7.6 to 9	9.1 to 9.9
R10	≥10 to <19	≥10 to 12	12.1 to 15	15.1 to 18.9
R11	≥19 to <27	≥19 to 21	21.1 to 24	24.1 to 26.9
R12	≥27 to <35	≥27 to 29	29.1 to 32	32.1 to 34.9
R13	≥35	≥35 to 36	36.1 to 38	≥38.1
This table should not be read or relied upon without reference to the CSIRO/Standards Australia publication: AS/NZS 4586 Slip Resistance Classification of New Pedestrian Surface Materials (Appendices A & D).				

CSIRO has categorized the AS4586 classifications into sub-groups Low, Medium & High. The slip resistance test classification is still determined according to AS 4586 Australian Standard (Appendices A & D). The added information of Low, Medium and High allows professionals to make a better judgement of pedestrian floor requirements.